

Application No.: 10/550,539
Amendment Dated: June 10, 2009
Reply to Office Action of: March 12, 2009

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Amendments to the Drawings:

The attached sheets of drawings include changes to Figs. 10-15. These sheets replace the original sheets.

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Remarks/Arguments:

Claims 1, 3, 5, 6, 8, 9, 11-17, 19, 21, 22, 24, 25, 27, 28 and 30 have been amended. Claims 31 and 32 have been added. No new matter is introduced herein. Claims 2, 18 and 29 have been cancelled. Claims 1, 3-17, 19-28 and 30-32 are pending.

The specification has been amended at the paragraph beginning at page 50, line 4, to correct typographical errors. No new matter is introduced herein.

The drawings have been objected to. In particular, Figs. 10-15 have been objected to because they do not include a "PRIOR ART" legend. Claims 10-15 have been amended accordingly. Applicants respectfully request that the objection to the drawings be withdrawn.

Claims 6-11 and 22-27 have been rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. In particular, it is asserted that claims 6-10 and 22-26 include insufficient antecedent basis for the limitation "said third slice level voltage." Claims 6, 8, 9, 22, 24 and 25 have been amended to depend from respective new claims 31 and 32 (dependent from respective claims 1 and 17), which include the limitations of a second slice level voltage and a third slice level voltage. In addition, it is asserted that claims 11 and 27 include insufficient antecedent basis for the limitation of "said recording layers." Claims 11 and 27 have been amended to clarify that the optical information recording medium has a plurality of multi-layered recording surfaces. Accordingly, Applicants respectfully request that the rejection of claims 6-11 and 22-27 under 35 U.S.C. § 112, second paragraph, be withdrawn.

Claims 29 and 30 have been rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter. Claim 29 has been cancelled. It is asserted that claim 30 is drawn to a computer readable medium having stored thereon a computer program, where the computer readable medium "as defined in the specification on page 52, lines 15-18 can be a signal or wave; therefore, fail(s) to fall within a statutory category of invention." Applicants have amended the specification to remove the paragraph at page 52, lines 15-18 which recites that "a mode of use of the program of the present invention may also be a mode in which the program is

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transmitted through a transmission medium.” Claim 30 has also been amended to recite a “tangible computer readable recording medium carrying a program of causing a computer to function as said control means of the optical pickup driving apparatus according to claim 1.” Accordingly, Applicants respectfully request that the rejection of claim 30, under 35 U.S.C. § 101, be withdrawn.

Applicants appreciate the indication, at paragraph 13 on pages 12-13 of the Office Action, that claims 2, 12, 18 and 28 include allowable subject matter and would be allowable if rewritten in independent form. Accordingly, claims 1 and 17 have been rewritten to include all of the features of respective claims 2 and 18. No new matter is introduced herein. Claims 2 and 18 have been cancelled. Because claims 1 and 17 include the indicated allowable features of respective claims 2 and 18, these claims are now in condition for allowance. Claims 12 and 28 depend from respective claims 1 and 17, and are thus allowable.

Claims 1, 3-8, 14, 17, 19-24, 29 and 30 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Takeya et al. (US 2001/0008506). Claims 13, 15 and 16 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Takeya et al. in view of Kitani et al. (US 2003/0151991). Claims 9, 10, 25 and 26 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Takeya et al. in view of Kobayashi (US 7,145,842). Claim 29 has been cancelled. It is respectfully submitted, however, that the remaining claims are patentable over the cited art for the reasons set forth below.

Claim 1, as amended, includes the indicated allowable features of:

... when said control means newly detects that the voltage of said focus error signal has reached a third slice level voltage corresponding to displacement of predetermined magnitude from said reference potential before the amount of movement of said objective lens reaches said predetermined amount of movement, said control means controls beam spot positioning so as to focus the optical spot.

Claim 17 includes a similar recitation.

Takeya et al. disclose, in Fig. 1, a multiple-layer disk reproducing apparatus for reproducing optical disk 20 using optical pickup 22 (paragraph [0083]). According to Takeya et al., a focus error signal is detected by optical pickup 22 when the objective lens is moved up and down, where a gain value is set based on the focus error signal (paragraphs [0099-0100]).

Takeya et al., however, do not disclose the allowable feature of "... when said control means newly detects that the voltage of said focus error signal has reached a third slice level voltage corresponding to displacement of predetermined magnitude from said reference potential before the amount of movement of said objective lens reaches said predetermined amount of movement, said control means controls beam spot positioning so as to focus the optical spot," as required by claim 1 (emphasis added). Accordingly, allowance of claim 1 is respectfully requested.

Although not identical to claim 1, claim 17 also includes a similar recitation. Accordingly, Applicants respectfully request allowance of claim 17 for at least the same reasons as claim 1.

Claims 3-11, 13-16, 19-27 and 30 include all of the features of respective claims 1 and 17 from which they depend. Accordingly, these claims are also patentable over the cited art.

Referring to the subject specification, Applicants' claim 1 recites that when the control means detects that the voltage of the focus error signal has reached a third slice level voltage (a predetermined focus error signal detection slice level voltage G of Fig. 3, S4 of Fig. 2, the detection time point is α as shown in Fig. 3), **the moving means moves the objective lens toward the recording surface by a maximum of an upper limit of a predetermined amount of movement** (a limit value (L_{lim}), line 13, page 27 of the specification), and **when the amount of movement of the objective lens has reached the predetermined amount of movement** (a position (A) shown on right side in Fig 3), **the moving means moves the objective lens away from the recording surface** (S11 of Fig. 2) (emphasis added). In addition, claim 1 recites that **when the control means newly detects** (S6 of Fig. 2) that the voltage of the focus error signal has reached a

third slice level voltage (a predetermined focus error signal detection slice level voltage G of Fig. 3) **before the amount of movement of the objective lens reaches the predetermined amount of movement** (the detection time point is β on the waveform C of the focus error signal of the second layer 121c as shown in Fig. 3), **the control means controls beam spot positioning so as to focus the optical spot** (emphasis added). By these features, Applicants' claimed invention is able to prevent the optical disk and the objective lens from colliding.

According to amended claim 1, when the control means newly detects that the voltage of the focus error signal has reached a third slice level voltage before the amount of movement of the objective lens reaches the predetermined amount of movement, the control means stops the objective lens approaching the optical disk and then controls beam spot positioning so as to focus the optical spot. That is, only when the voltage of the focus error signal does not reach the third slice level voltage before the amount of movement of the objective lens reaches the predetermined amount of movement, the objective lens continues to approach the optical disk, until the amount of movement of the objective lens has reached the predetermined amount of movement (for example, a limit value L_{lim}).

In contrast, Takeya et al. disclose that if the obtained FE signal complies with the predetermined value (step S7 "YES" IN Fig. 5), the operation flow proceeds to a step S8 and then the timer starts a counting operation for the time T1. Thus, the lens always continues to be moved up until the counted time by the timer reaches the defined time T1 (see paragraph [0105], [0106] of Takeya et al.). Further, Takeya et al. disclose that if it reaches the defined time T1 (Step S10 "YES"), the operation flow proceeds to a step S11 and the lens is moved down at a step S12.

Therefore, according to Takeya et al., the lens is always continually moved up until the counted time by the timer reaches the defined time T1. In contrast, according to Applicants' claimed invention, only when the voltage of the focus error signal does not reach the third slice level voltage before the amount of movement of the objective lens reaches the predetermined amount of movement, the objective lens is continued to be moved up until the amount of movement of the objective lens

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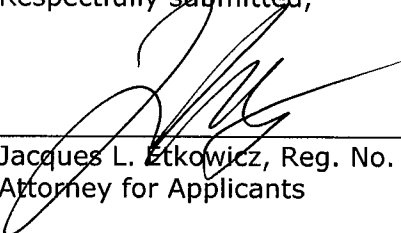
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reaches the predetermined amount of movement. Thus, Takeya et al. do not include all of the features or advantages of Applicants' claims 1 and 17.

Claims 31 and 32 have been added. No new matter is introduced herein. Claims 31 and 32 include the features removed from respective claims 1 and 17. Claims 31 and 32 include all of the features of respective claims 1 and 17 from which they depend and are patentable over the cited art for at least the same reasons as claims 1 and 17.

In view of the amendments and arguments set forth above, the above-identified application is in condition for allowance, which action is respectfully requested.

Respectfully submitted,



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Attachments: Figs. 10-15 (6 sheets)

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